4, pp. 621–630 24 January 1977

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

A NEW GENUS AND EASTERN PACIFIC SPECIES OF BODIANINE LABRID FISH

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Gomon and Randall (1975) published an abbreviated description[1] of a new labrid species, *Bodianus russelli*, allocated to *Bodianus* on the basis of preliminary results of an ongoing revision of the tribe Bodianini (subfamily Bodianinae of Norman, 1966). The revision currently being undertaken by Gomon indicates that several characters (including jaw dentition, extent of squamation and scale counts) used to distinguish various genera closely allied to *Bodianus* (= *Lepidaplois*) are unsatisfactory. Gomon and Randall interpreted the meristic and morphological characters of *russelli* to be within the realm of interspecific variation of *Bodianus*. Subsequent osteological analyses, however, indicate that *russelli* lacks a number of specializations shared by the other species of *Bodianus*, and merits generic recognition. A thorough discussion of the osteology and phylogenetic relationships of the tribe Bodianini will be presented in a forthcoming paper. In addition, recent collecting in the tropical Eastern Pacific has revealed a second species closely related to *russelli* that also belongs to the genus described here. A description of this second species follows that of the genus.

[1] A comprehensive description of *russelli* will appear in: Gomon and Randall (in press). A review of the Hawaiian labrid fishes of the tribe Bodianini, Bulletin of Marine Science.

Methods

Type specimens are deposited in fish collections of the following institutions: California Academy of Sciences (CAS); Scripps Institution of Oceanography, University of California (SIO); University of Costa Rica (UCR); Rosenstiel School of Marine and Atmospheric Science, University of Miami (UMML); U. S. National Museum of Natural History (USNM).

Terminology follows that of Hubbs and Lagler (1947) except: caudal-fin ray count includes dorsal unsegmented rays + dorsal segmented, unbranched rays + segmented, branched rays + ventral segmented, unbranched rays + ventral unsegmented rays; pectoral fin rays are indicated with unbranched rays in lower case Roman numerals and branched rays in Arabic (the dorsalmost pectoral-fin ray in labrids is typically short, unsegmented and unbranched; the second ray is typically long, segmented and unbranched); gill-raker counts are given as upper and lower-limb counts and include all rudiments (raker at angle included in lower-limb count); orbital length is the horizontal measurement. Figures enclosed by parentheses following meristic data indicate number of specimens or structures (e.g., pectoral fins, lateral lines) exhibiting count, unless stated otherwise; when meristic ranges are given, the count for the holotype is indicated by an asterisk (*). Measurements were taken in mm with needlepoint dial calipers; morphometric dimensions are given as ranges in percent of standard length (SL).

Polylepion, new genus

Type-species: *Bodianus russelli* Gomon and Randall 1975.

Diagnosis: Labrid fishes with the following combination of characters: dorsal fin XI, 11; anal fin III, 11–12; pectoral fin ii, 17–19 (usually 18); lateral-line scales 48–52 (usually 50); scales above lateral line 2½–5; scales below lateral line 16–19 (usually 17 or 18); predorsal scales approximately 25–32, reaching in front of anterior nostril or at least to anterior edge of orbit; color in alcohol pale except for dusky to dark spot on dorsal fleshy base of caudal fin, and dark interradial membranes anteriorly in dorsal fin of one species.

Etymology: *Polylepion*, derived from the Greek adjective *polys* (many) and neuter noun *lepion* (small scales), refers to the relatively numerous lateral-line scales occurring in species of this genus.

TABLE 1. Comparison of selected characters between *Polylepion* and four closely related genera; figures in parentheses indicate infrequently occurring meristic values.

Genus	Dorsal fin	Anal fin	Pectoral fin	Vertebrae	Lateral line scales	Base of dorsal and anal fin	Squamation of head dorsum
Polylepion	XI, 11	III, 11–12	ii, 18 (17, 19)	11 + 17	48–52	Naked	Scales reaching forward to anterior edge of orbit or in advance of anterior nostril
Bodianus	XII, 10 (9, 11)	III, 12 (11)	ii, 14–15 (16)	11 + 17	30–48	Naked or scaled	Scales approaching posterior edge of orbit, reaching in advance of anterior nostril or reaching anywhere between
Decodon	XI, 10 (9)	III, 10	ii, 14–15	11 + 17	26–30	Naked	Scales reaching forward to about anterior nostril
Pimelometopon	XII, 10	III, 12	ii, 16 (15, 17)	11 + 17	53–57	Naked	Scales reaching forward to about posterior extent of orbit
Semicossyphus	XII, 10	III, 12	ii, 15	12 + 16	42–45	Naked	Scales reaching forward to about posterior extent of orbit

Comparisons: Species of *Polylepion* most closely resemble the bodianine genera *Decodon*, *Pimelometopon*, *Semicossyphus* and *Bodianus*, especially those species that lack scales on the basal portion of the dorsal and anal fins. A comparison of selected meristic and morphological characters of these five genera appears in Table 1. Certain osteological features including the nature of the association of the frontals and medial ethmoid and the structure of the posterior ends of the lower jaw bones indicate that ancestors of the genus *Polylepion* diverged early from the line giving rise to *Bodianus*.

The genus contains two species, *russelli*, from the Hawaiian and Ryukyu Islands, and *cruentum* described below from the western coast of Central America.

Polylepion cruentum, new species
Figures 1, 2 left, 3

Holotype: USNM 215465 (110), Eastern Pacific, Costa Rica, off Quepos, depth 190 m, shrimp trawl, collected by Frederick H. Berry, 11 March 1974.

Paratypes: USNM 215466 (10, 64.1–107), same data as holotype, 1 specimen cleared and stained; CAS 36000 (2, 118–92.0), same data as holotype; UMML 32923 (3, 56.8–74.3), same data as holotype except depth 165 m; SIO 68-4-50 (199), Mexico, Baja California Sur, San Jaime Bank, 22°53.9′N, 110°15.8′W, G. Moser, 11 December 1967; UCR 353-2 (139), Eastern Pacific, Costa Rica, Puntarenas, 5 mi. SE Cabo Blanco, depth 154 m, try net, R. T. Nishimoto, 18 July 1969.

Description: (see Table 2 for proportional measurements); Dorsal fin rays XI, 11; anal fin rays III, 12; caudal fin rays 9*(4), 10(5) or 11(2) + 2 + 12 + 2 + 9(8), 10*(2) or 11(1); pectoral fin rays ii, 17(3), ii, 18*(29) or ii, 19(2); pelvic fin rays I, 5; vertebrae 11 + 17; lateral line scales 49(1), 50*(11) or 51(3) + 2(6) or 3*(5) = 52(3) or 53(8), scales above lateral line 2½–4½ (usually 3½*); scales below lateral line 16–18* (usually 17); predorsal scales approximately 25–32 (averaging about 28, 31 in holotype); gill rakers 5–8 + 10–12 = 15–19 (usually 6* or 7 + 11*).

Body moderately narrow, tapering markedly posteriorly. Head large pointed; predorsal profile straight except for convexity above eyes in small specimens; nape nearly straight in juveniles to moderately arched in adults.

Scales on trunk moderately large; scales not extending onto bases of dorsal and anal fins; lateral line smoothly curved, uninterrupted; lateral line scales notched posteriorly, with canal tapered and turned slightly dorsally near posterior edge. Head mostly scaled (Figure 2 left); scales on nape and top of head becoming progressively smaller anteriorly, reaching forward to about midpoint between anterior nostril and snout tip; small scales covering cheek, infraorbital and lower sides of head anteriorly to corner of mouth, somewhat more anteriorly on sides of lower jaw;

TABLE 2. Selected proportional measurements in percent standard length for holotype and paratypes of *Polylepion cruentum*.

Character	Holotype	Paratypes
Standard length (mm)	110	56.8–199
Body depth	27.3	23.5– 29.4
Head length	40.4	38.9– 43.8
Snout length	9.5	7.6– 12.3
Orbital diameter	10.7	8.0– 12.0
Bony interorbital distance	5.6	4.5– 6.0
Upper jaw length	11.1	9.7– 14.2
Predorsal length	36.4	35.7– 38.1
Caudal peduncle depth	13.0	11.8– 13.6
Dorsal-fin base	50.4	46.9– 52.6
Depressed dorsal fin	64.1	59.9– 68.2
First dorsal-fin spine	7.9	7.0– 8.6
Eleventh dorsal-fin spine	10.2	9.1– 12.2
Anal-fin base	22.8	21.8– 25.3
Depressed anal fin	34.2	33.9– 38.2
First anal-fin spine	5.8	4.7– 6.5
Third anal-fin spine	10.3	8.6– 10.9
Upper segmented caudal-fin rays	21.4	19.5– 23.1
Central segmented caudal-fin rays	21.0	20.7– 24.2
Pectoral-fin length	18.2	17.3– 20.6
Pelvic-fin length	20.4	14.7– 25.0

narrow posteroventral margin of preopercle naked; free preopercular margin smooth in adults, posterior edge minutely serrate in juveniles; operculum mostly covered by large scales; posterior opercular membrane naked with large dorsoposterior flap.

Lower lip broad, greatly exposed when mouth closed in largest specimen, much less so in smaller specimens; crease at corner of mouth curved dorsally; posterior end of maxillary reaching below a point about midway between anterior edge of orbit and center of eye. Each jaw (Figure 3) with two pairs of widely spaced, large, curved canines anteriorly; anterior canines in upper jaw of equal size, followed by single row of 6 to 14 (averaging about 9 or 10) much smaller canines and 1 or 2 (usually 1) moderately large canines positioned near posterior tip of jaw; anteromedial canine on each side of lower jaw markedly smaller than second canine, followed by a single row of 8 to 19 smaller canines in two series, an anterior series of usually 7 or 8 teeth and an adjoining posterior row of usually 6 or 7 distinctly smaller teeth. Gill rakers moderately long, raker in angle often bifurcate distally.

Dorsal fin continuous, origin slightly anterior to a vertical at axis of pectoral fin, well in advance of posterior extent of opercular margin;

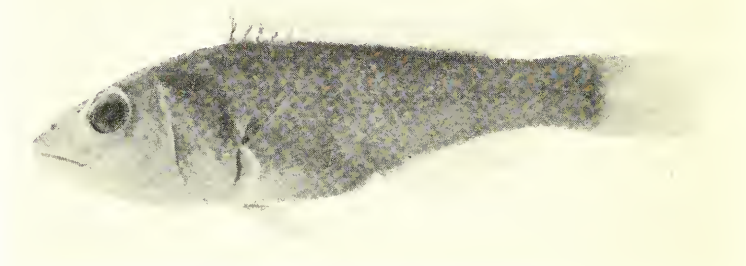

Fig. 1. *Polylepion cruentum*, SIO 68-4-50, paratype, 199 mm SL.

first dorsal fin spine slightly shorter than second (difference greater in smaller specimens), succeeding spines of nearly equal length; membrane between dorsal and anal fin spines deeply incised, flag-like process produced from tip of each spine; dorsal and anal fins slightly pointed posteriorly, distinctly not reaching posterior edge of hypurals in all but juveniles (dorsal fin of specimens smaller than about 70 mm reaching edge). Caudal fin slightly rounded in juveniles to truncate with center of posterior fin edge convex in largest individuals. Pelvic fins short in juveniles, first segmented ray becoming filamentous, reaching beyond anus in larger adults.

This species attains at least 199 mm SL. All type-specimens larger than 97 mm, including the holotype, are males; females range in size from 74.3–94.1 mm; two specimens measuring 56.8 mm and 64.5 mm appear to be immature.

Color in alcohol: Mostly pale; membranes between anterior dorsal fin spines black, dark pigment confined to fin base and fin margin between posterior spines. Juveniles with oval black spot, approximately equal to eye diameter, present on upper fleshy base of caudal fin (centered at posterior edge of hypurals); spot becoming fainter in larger specimens, usually absent in specimens larger than 100 mm. Opercular region appearing dusky from dark pigment on inner side of opercular flaps. Freshly preserved specimens with faint irregular narrow dusky stripes on nape and dorsal portion of body.

Color in life: Mostly pink; chest, belly and underside of head white. Approximately three or four narrow, wavy yellow stripes on dorsal two-thirds of body posterior to head (stripes more numerous in juveniles). Yellow stripes separated by pearly pink stripes in juveniles, with two and then one pink stripe becoming accentuated midlaterally in adults; single stripe reaching from posterodorsal extent of opercular flap to below fourth segmented dorsal fin ray in largest specimen examined. Head with wavy yellow stripes and marks; first stripe broad, directed forward from ante-

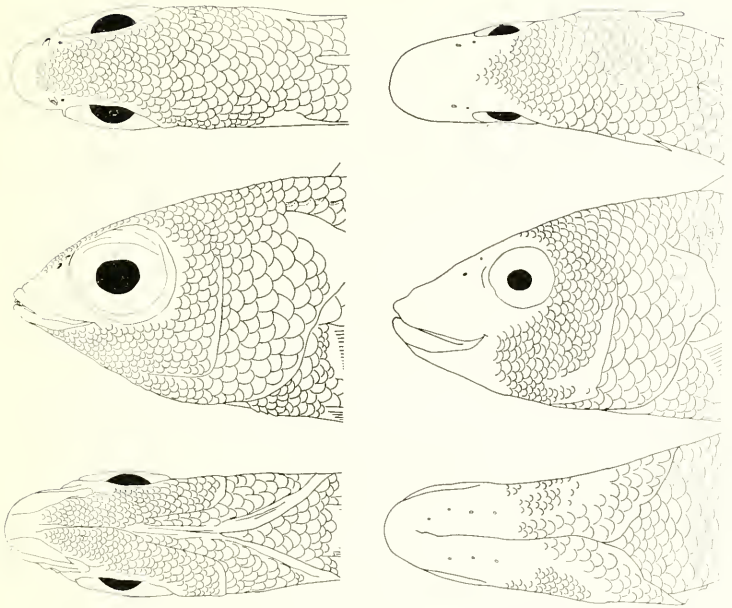

Fig. 2. Scale pattern on head of *P. cruentum* (left), USNM 215466, 75.9 mm SL, and *P. russelli* (right), USNM 212175, 287 mm SL. From top to bottom: dorsal, lateral and ventral views.

rior extent of orbit, connecting with corresponding stripe from opposite side across snout; second stripe forming broad yellow border to entire upper lip, continuing posterodorsally around posteroventral quarter of orbital rim and then directed posterodorsally to upper angle of gill opening; several other short irregular marks on side of head including vertical line or blotch on posterior margin of preopercle and short horizontal line ventrally on cheek below posterior extent of orbit. Narrow black border present on dorsal side of eye. Large oval spot on upper fleshy caudal base black in juveniles, becoming blood red in adults (change in color occurring at about 75 mm), spot becoming diffuse in very large individuals; spot outlined, at least anteriorly, by broad pearly pink border. Dark pigment in spinous portion of dorsal fin black, two anteriorly converging reddish pink stripes present on segmented portion of fin, one basally and one midlaterally; broad distal portion of fin and area between pink stripes yellow. Anal fin white with broad distal yellow stripe. Caudal fin pinkish dorsally and ventrally, separated by broad yellowish expanse; narrow black posterior margin of fin present in some specimens. Pectoral fins transparent with broad blood red band on fleshy base. Pelvic fins white.

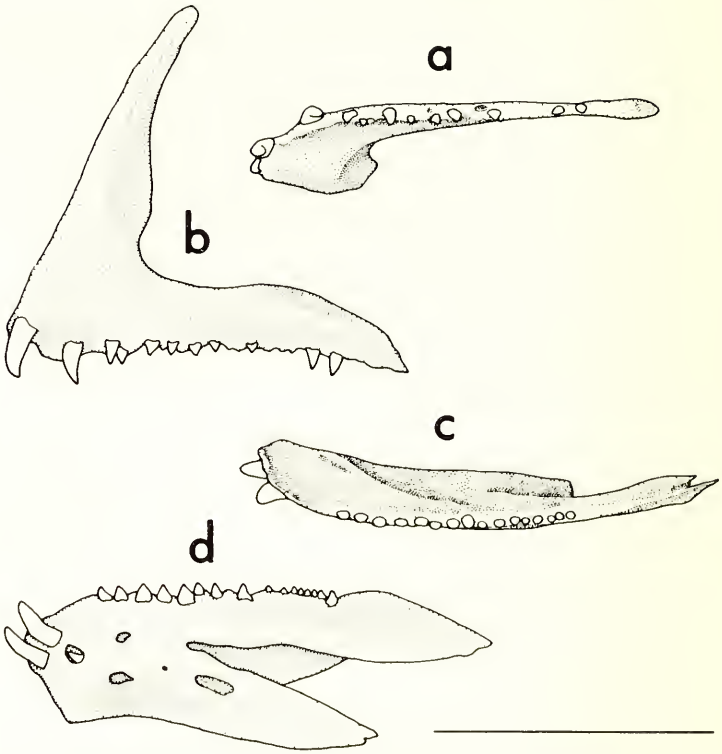

Fig. 3. Dentition in upper and lower jaws of *P. cruentum*. Premaxillary: (a) ventral view, (b) lateral view. Dentary: (c) dorsal view, (d) lateral view. USNM 215466, 79.2 mm SL. Line indicates 5 mm.

Distribution: Type-specimens were collected in two localities, Gulf of California and Pacific coast of Costa Rica, at depths of 150 to 200 m. This species has been taken on several occasions with *Decodon melasma* and with additional collecting undoubtedly will be shown to occur at similar depths in soft bottom areas associated with rock rubble and rock reefs all along the tropical Eastern Pacific coast of the Americas.

Etymology: *cruentum*, a Latin adjective meaning spotted with blood, in reference to the blood red marks on the caudal peduncle and pectoral fin base in live adults.

Relationships: *P. cruentum* differs from *P. russelli* in having III, 12 anal-fin rays (III, 11 in *P. russelli*), scales on forehead extending forward in advance of anterior nostril (only to anterior extent of orbit in *P. russelli*, Figure 2) and anterior interspinal membranes of dorsal fin black

(not darkly pigmented in *P. russelli*), in addition to other differences in life colors. In body proportions, *P. cruentum* has a longer head (38.9–43.8 versus 35.6–37.7), narrower caudal peduncle (11.8–13.6 versus 13.9–15.5) and pelvic fin that reaches a greater length, becoming filamentous in adults (14.7–25.0 versus 14.4–18.8, not filamentous in *P. russelli*). This species may also have a larger eye and orbit (8.0–12.0 versus 6.5–7.2), narrower bony interorbital (4.5–6.0 versus 6.3–8.1) and shorter depressed anal fin (33.9–38.2 versus 28.7–31.7); however, these characters exhibit disproportionate allometric changes and approach values recorded for *P. russelli* in the largest specimens. The smallest specimen of *P. russelli* presently available measures 249 mm SL.

Both species appear to occur at great depths relative to other bodianines and for that matter all labrids. Because rocky areas at these depths are infrequently collected, it might be expected that the ranges of such fishes are much broader than currently recognized.

Acknowledgments

I thank Richard H. Rosenblatt (SIO) and Frederick H. Berry for providing specimens and color transparencies of the new species. William A. Bussing (UCR) supplied an additional specimen and thoughtful remarks. William F. Smith-Vaniz and John E. Randall read and made comments on the manuscript.

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